Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A system for assisting a driver operating a vehicle traveling on a road, the system comprising:

a device arrangement configured to determine ~~determining~~ an obstacle as a target obstacle in a path of the vehicle and to determine ~~providing~~ information on the target obstacle and width of the target obstacle;

a device configured to detect a ~~detecting~~ status of the vehicle;

a device configured to determine ~~determining~~ a risk that the vehicle may come into contact with the target obstacle based on the information on the target obstacle and the detected status of the vehicle; and

a control arrangement configured to regulate ~~regulating~~ at least one of a reaction force input to the driver and a force applied to the vehicle based on the determined risk and the width of the target obstacle.

2. (Currently Amended) The system as recited in claim 1, wherein the control arrangement includes a controller configured to regulate ~~that regulates~~ the at least one of the reaction force input to the driver and the force applied to the vehicle in response to a control amount determined on the basis of ~~based on~~ the determined risk.

3. (Currently Amended) The system as recited in claim 2, wherein the device arrangement includes a width measurement device configured to measure ~~that measures~~ a width of the target obstacle, and the control arrangement includes a correction device configured to correct ~~that corrects~~ the control amount on the basis of ~~based on~~ the measured width of the target obstacle.

4. (Original) The system as recited in claim 3, wherein the force applied to the vehicle is at least one of a driving force and a braking force.

5. (Original) The system as recited in claim 3, wherein the smaller the width of the target obstacle, the smaller the correction of the control amount.

6. (Currently Amended) The system as recited in claim 3, wherein the correction device is configured to correct ~~corrects~~ the control amount on the basis of ~~based on~~ the measured width upon determining that the vehicle is overtaking the target obstacle.

7. (Currently Amended) The system as recited in claim 3, wherein the correction device is configured to correct ~~corrects~~ the control amount on the basis of ~~based on~~ the measured width and an overlap between the target obstacle and the path.

8. (Currently Amended) The system as recited in claim 1, wherein the control arrangement is configured to regulate ~~regulates~~ a reaction force from a driver controlled input device for longitudinal control of the vehicle.

9. (Currently Amended) The system as recited in claim 1, wherein the control arrangement is configured to regulate ~~regulates~~ a reaction force from a driver controlled input device for lateral control of the vehicle.

10. (Original) The system as recited in claim 9, wherein the driver controlled input device is a steering wheel.

11. (Original) The system as recited in claim 1, wherein the path of the vehicle is an estimated path.

12. (Currently Amended) The system as recited in claim 7, wherein the control amount is variable with a gain, and wherein the correction device is configured to gradually increase ~~increases~~ the gain from a predetermined value as the overlap increases.

13. (Currently Amended) The system as recited in claim 7, wherein the control amount is variable with a gain, and wherein the correction device is configured to gradually increase

~~increases~~ the gain from 0 (zero) as the overlap increases after exceeding a predetermined value.

14. (Currently Amended) The system as recited in claim 7, wherein the control amount is variable with a gain, and wherein the correction device is configured to gradually increase ~~increases~~ the gain from a predetermined value as the overlap varies in increasing direction after exceeding a predetermined value, but gradually decreases the gain to 0 (zero) as the overlap varies in decreasing direction.

15. (Currently Amended) A vehicle comprising:

a device arrangement configured to determine ~~determining~~ an obstacle as a target obstacle in a path of the vehicle and to determine ~~providing~~ information on the target obstacle and width of the target obstacle;

a device configured to detect a ~~detecting~~ status of the vehicle;

a device configured to determine ~~determining~~ a risk that the vehicle may come into contact with the target obstacle based on the information on the target obstacle and the detected status of the vehicle; and

a control arrangement configured to regulate ~~regulating~~ at least one of a reaction force input to the driver and a force applied to the vehicle based on the determined risk and the width of the target obstacle.

16. (Currently Amended) The vehicle as recited in claim 15, wherein the device arrangement includes a width measurement device configured to measure ~~that measures~~ a width of the target obstacle, and the control arrangement includes a controller configured to regulate ~~that regulates~~ the at least one of the reaction force input to the driver and the force applied to the vehicle in response to a control amount determined on the basis of ~~based on~~ the determined risk, and, [[and]] a correction device that corrects the control amount on the basis of ~~based on~~ the measured width of the target obstacle.

17. (Currently Amended) A method of assisting a driver operating a vehicle traveling on a road, the method comprising:

determining an obstacle as a target obstacle in a path of the vehicle and determining ~~providing~~ information on the target obstacle and width of the target obstacle;

detecting status of the vehicle;

determining a risk that the vehicle may come into contact with the target obstacle based on the information on the target obstacle and the detected status of the vehicle; and

regulating at least one of a reaction force input to the driver and a force applied to the vehicle based on the determined risk and the width of the target obstacle.

18. (Currently Amended) The method as recited in claim 17, further comprising measuring the width of the target obstacle; and wherein the step of regulating includes: regulating the at least one of the reaction force input to the driver and the force applied to the vehicle in response to a control amount determined on the basis of ~~based on~~ the determined risk; and correcting the control amount on the basis of ~~based on~~ the measured width of the target obstacle.

19. (Currently Amended) A system for assisting a driver operating a vehicle traveling on a road, the system comprising:

means for determining an obstacle as a target obstacle in a path of the vehicle and determining ~~providing~~ information on the target obstacle and width of the target obstacle;

means for detecting status of the vehicle;

means for determining a risk that the vehicle may come into contact with the target obstacle based on the information on the target obstacle and the detected status of the vehicle; and

means for regulating at least one of a reaction force input to the driver and a force applied to the vehicle based on the determined risk and the width of the target obstacle.

20. (Currently Amended) The system as recited in claim 19, further comprising means for measuring the width of the target obstacle; and means for regulating includes: means for regulating the at least one of the reaction force input to the driver and the force applied to the

vehicle in response to a control amount determined on the basis of ~~based on~~ the determined risk; and means for correcting the control amount on the basis of ~~based on~~ the measured width of the target obstacle.

21. (New) The system as recited in claim 2, wherein the device arrangement is configured to determine a lateral deviation (Δd) of the vehicle from a centerline of a lane on the road, and a width (W) of the target obstacle, and the control arrangement calculates an overlap ratio (La) that is expressed as:

$$La = 1 - \Delta d / W.$$

22. (New) The system as recited in claim 21, wherein the control arrangement is configured to determine an overlap ratio gain against the overlap ratio.

23. (New) The system as recited in claim 22, wherein the control arrangement includes a correction device configured to calculate a repulsive force, wherein the system is configured to use the repulsive force in a calculation to correct the control amount on the basis of the overlap ratio gain.

24. (New) The system as recited in claim 23, wherein the correction device is configured to calculate the repulsive force on the basis of the overlap ratio gain when the determined risk is greater than or equal to a predetermined value.

25. (New) The system as recited in claim 24, wherein the correction device is configured to set the repulsive force to a zero value when the determined risk is less than the predetermined value.

26. (New) The system as recited in claim 21, wherein the control arrangement is configured to determine a correction coefficient against the overlap ratio.

27. (New) The system as recited in claim 26, wherein the control arrangement includes a correction device configured to multiply the correction coefficient with a steering reaction force reduction amount that is determined in regard to the determined risk.

28. (New) A system for assisting a driver operating a vehicle travelling on a road by manipulating a steering wheel, an accelerator pedal and a brake pedal, the vehicle including an engine and a brake system, comprising:

a radar configured to detect obstacles in front of the vehicle and to measure a distance from the vehicle to detected obstacles and a lateral position of the detected obstacles relative to the vehicle;

a vehicle speed sensor configured to detect a vehicle speed of the vehicle and to provide a sensor signal indicative of the detected vehicle speed;

an obstacle recognition device configured to receive the measured distance and the lateral position of the detected obstacles from the radar and the detected vehicle speed from the vehicle speed sensor and to determine a distance from the vehicle to the detected obstacles, a lateral distance from the vehicle to the detected obstacles, and a width of the detected obstacles, wherein the obstacle recognition device is configured to provide signals indicative of information on the obstacles including the recognized distance, lateral distance, and width;

a steering angle sensor configured to detect a steering angle of the steering wheel and to provide a sensor signal indicative of the detected steering angle;

an accelerator pedal stroke sensor configured to detect a position of the accelerator pedal and to provide a sensor signal indicative of the detected position of the accelerator pedal and thus a driver power demand expressed via the accelerator pedal;

a brake pedal stroke sensor configured to detect a position of the brake pedal and to provide a sensor signal indicative of the detected position of the brake pedal and thus a driver brake demand expressed via the brake pedal;

a main controller configured to receive the signals from the vehicle speed sensor, obstacle recognition device, steering angle sensor, and accelerator pedal stroke sensor and to provide a driving force correction amount and a braking force correction amount;

a driving force controller configured to receive the sensor signal indicative of the driver power demand and to provide a driving force request that is varied to realize a predetermined driving force request versus a driver power demand characteristic,

wherein the driving force controller is configured to receive the driving force correction amount and to modify the driving force request by the driving force correction amount to provide the modified driving force request as a target driving force,

wherein the driving force controller is configured to provide an engine control signal that is applied to the engine to accomplish the target driving force; and

a braking force controller configured to receive the sensor signal indicative of the driver brake demand and to provide a braking force request that is varied to realize a predetermined braking force request versus a driver brake demand characteristic,

wherein the braking force controller is configured to receive the braking force correction amount to provide a modified braking force request as a target braking force,

wherein the braking force controller is configured to provide a brake control signal that is applied to the brake system to accomplish the target braking force;

wherein the main controller is programmed to:

determine a travelling path of the vehicle based on the detected vehicle speed and the detected steering angle;

select a closest one of the detected obstacles in the determined travelling path as a target obstacle;

calculate a spring force applied to the vehicle by an imaginary elastic body compressed between the vehicle and the target obstacle, the spring force being expressed as:

$$C = k \times (Th - D)$$

where: C is the spring force of the imaginary elastic body, k is a spring constant of the imaginary elastic body, Th is an unstressed length of the imaginary elastic body, and D is the distance between the vehicle and the obstacle,

calculate, on the basis of the width of the target obstacle, an overlap ratio indicative of degree to which the target obstacle overlaps the travelling path,

calculate a risk in relation to the vehicle and the target obstacle,

determine, when the risk is higher than a predetermined value, a repulsive force based on the spring force and the overlap ratio, and

calculate the driving force correction amount and the braking force correction amount based on the repulsive force.

29. (New) The system as recited in claim 28, wherein the main controller is configured to execute determination of the repulsive force upon determining that the vehicle is overtaking the target obstacle.

30. (New) The system as recited in claim 28, further comprising an accelerator pedal reaction force generation device,

wherein the main controller is configured to calculate an accelerator pedal reaction force value on the basis of the repulsive force and the accelerator pedal reaction force generation device is configured to regulate a reaction force from the accelerator pedal in response to the accelerator pedal reaction force value.

31. (New) The system as recited in claim 28, further comprising a brake pedal reaction force generation device,

wherein the main controller is configured to calculate a brake pedal reaction force value on the basis of the repulsive force and the brake pedal reaction force generation device is configured to regulate a reaction force from the brake pedal in response to the brake pedal reaction force value.

32. (New) The system as recited in claim 28, further comprising a steering reaction force generation device,

wherein the main controller is configured to determine a steering reaction force reduction amount versus the determined risk by using a predetermined relationship between the reduction amount and the risk, to determine a correction coefficient versus the overlap ratio by using a predetermined relationship between the coefficient and the overlap ratio, and to determine a steering reaction force value by subtracting a product of the determined

correction coefficient and the determined steering reaction force reduction amount from a predetermined initial steering reaction force value,

wherein the steering reaction force generation device is configured to regulate a steering reaction force from the steering wheel in response to the determined steering reaction force value.

33. (New) The system as recited in claim 28, wherein the overlap ratio is expressed as:

$La = 1 - \Delta d / W$

where: La is the overlap ratio; Δd is a lateral deviation of a longitudinal centerline of the target obstacle from a centerline of the travelling path of the vehicle; and W is the width of the target obstacle.

34. (New) The system as recited in claim 33, wherein the main controller is configured to determine an overlap ratio gain based on the overlap ratio by using a predetermined relationship between the overlap ratio gain and the overlap ratio, and the main controller is configured to execute determination of the repulsive force by multiplying the spring force with the overlap ratio gain.

35. (New) The system as recited in claim 34, wherein the overlap ratio gain increases gradually from a predetermined value that is lower than 1 and higher than 0 to a maximum value of 1 as the overlap ratio varies from 0 toward 1.

36. (New) The system as recited in claim 33, wherein, with a same width of the target obstacle, the greater the overlap ratio, the greater a degree to which the target obstacle overlaps the travelling path of the vehicle.

37. (New) The system as recited in claim 33, wherein, with a same lateral deviation of the centerline of the target obstacle from the centerline of the travelling path of the vehicle, the greater the overlap ratio, the greater the width of the target obstacle.